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| 10/611,790 | 06/30/2003 | Gopala Krishna R. Kakivaya | 3382-65593 | 1306 |
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| KLARQUIST SPARKMAN LLP 121 S.W. SALMON STREET SUITE 1600 PORTLAND, OR 97204 | | | | LAZARO, DAVID R |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/611,790 | KAKIVAYA ET AL. |
| | Examiner | Art Unit |
| | David Lazaro | 2155 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 12 October 2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 6/30/03 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/17/03
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

1. Claims 21-55 are canceled.
2. Claims 1-20 are pending in this office action.

Election/Restrictions

3. Applicant's election of Group I, claims 1-20, in the reply filed on 10/12/2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on 11/17/03 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 8-10 and 17-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

7. Claims 8 and 17 are directed to "a computer-readable media". Page 37, lines 18-21 of the specification states, "computer readable medium include...communication media". Communication media is described as including wired or wireless techniques. However, mediums such as wired and wireless communication media fail to be structurally and functionally interconnected with the software in such a manner to, in and of itself, enable any usefulness to be realized.. This also applies to dependent claims 17 and 18. Therefore claims 8-10 and 17-18 directed to non-statutory subject matter.

8. Claims 8-10 and 17-18 are rejected under 35 U.S.C. 101 because the claimed invention does not fall within a statutory category.

9. Claim 8 states, "A computer-readable media having computer-readable software programming thereon". Page 37, lines 18-21 of the specification states, "computer readable medium include...communication media". Communication media is describe as a modulated data signal and other carriers. Therefore, it is clear that the scope of the claimed computer readable medium is intended to cover communication media which, include signals, such as a modulated data signal. This is also the case for claims 9-10 which ultimately depend on claim 8.

10. Claim 17 also claims a "computer-readable media". For the same reasons described above, it is clear that the scope of such media includes signals. This is also the case for claim 18 which ultimately depends on claim 17.

11. As discussed in the *Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility*, the office's position is that signals, such as carrier waves, do not fall within one of the four statutory classes of 35 U.S.C. 101 (also see MPEP 2106). Therefore, based on the given evidence and the office's position, Claims 1-8 fail to fall within one of the four statutory categories and are ineligible for patent protection.

12. For clarification of the office's position on signals, the following is from Annex IV, paragraph (c), pages 55-57, of the *Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility*:

"Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101. First, a claimed signal is clearly not a "process" under § 101 because it is not a series of steps. The other three § 101 classes of machine, compositions of matter and manufactures "relate to structural entities and can be grouped as 'product' claims in order to contrast them with process claims." 1 D. Chisum, Patents § 1.02 (1994). The three product classes have traditionally required physical structure or material. "The term machine includes every mechanical device or combination of mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." Corning v. Burden, 56 U.S. (15 How.) 252, 267 (1854). A modern definition of machine would no doubt include electronic devices which perform functions. Indeed, devices such as flip-

flops and computers are referred to in computer science as sequential machines. A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result and, thus, does not fit within the definition of a machine.

A "composition of matter" "covers all compositions of two or more substances and includes all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." *Shell Development Co. v. Watson*, 149 F. Supp. 279, 280, 113 USPQ 265, 266 (D.D.C. 1957), aff'd, 252 F.2d 861, 116 USPQ 428 (D.C. Cir. 1958). A claimed signal is not matter, but a form of energy, and therefore is not a composition of matter. The Supreme Court has read the term "manufacture" in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." *Diamond v. Chakrabarty*, 447 U.S. 303, 308, 206 USPQ 193, 196-97 (1980) (quoting *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11, 8 USPQ 131, 133 (1931), which, in turn, quotes the Century Dictionary). Other courts have applied similar definitions. See *American Disappearing Bed Co. v. Arnaelsteen*, 182 F. 324, 325 (9th Cir. 1910), cert. denied, 220 U.S. 622 (1911). These definitions require physical substance, which a claimed signal does not have. Congress can be presumed to be aware of an administrative or judicial interpretation of a statute and to adopt that interpretation when it re-enacts a statute without change. *Lorillard v. Pons*, 434 U.S. 575, 580 (1978). Thus, Congress must be presumed to have been aware of the interpretation of manufacture in *American Fruit Growers* when it passed the 1952 Patent Act. A manufacture is also defined as the residual class of product. 1 Chisum, § 1.02[3] (citing W. Robinson, *The Law of Patents for Useful Inventions* 270 (1890)).

A product is a tangible physical article or object, some form of matter, which a signal is not. That the other two product classes, machine and

composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. A signal, a form of energy, does not fall within either of the two definitions of manufacture. Thus, a signal does not fall within one of the four statutory classes of § 101. On the other hand, from a technological standpoint, a signal encoded with functional descriptive material is similar to a computer-readable memory encoded with functional descriptive material, in that they both create a functional interrelationship with a computer. In other words, a computer is able to execute the encoded functions, regardless of whether the format is a disk or a signal. These interim guidelines propose that such signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of § 101. Public comment is sought for further evaluation of this question."

Claim Rejections - 35 USC § 112

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 19-20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

15. The preamble of claim 19 initially indicates "a computing device". However, the preamble ends with "the method comprising:". It is not clear as to how applicant is attempting to define their invention. Claim 20 depends on claim 19 and is therefore similarly deficient.

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

17. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication 2002/0156875 by Pabla (Pabla).

18. With respect to claim 1, Pabla teaches a method of reliably discovering devices and services with ad-hoc and server-based operation in a network environment of devices acting as discovery clients and discovery responders, the method comprising:

detecting by a discovery client whether a discovery server is present (Page 4 [0053] Page 5 [0057] and page 6 [0067] - peer (client) determines if there are any peer group name servers (discovery server) present);

in a detected absence of any discovery server, conducting discovery by the discovery client as a multicast operation (Page 4 [0053] and Page 5 [0057]: if name server not detected, discovery continued through multicast);

in a detected presence of any discovery server, suppressing by the discovery client of its multicast operation and conducting discovery by the discovery client directed to the detected discovery server (Page 4 [0053] and Page 5 [0057]: if name server

detected, peer stops using multicast and instead uses the name server for discovery);
and

continuing by the discovery responders to respond to multicast discovery regardless of the presence or absence of the discovery server in the network environment (Page 4 [0053] and Page 5 [0057]: as peers default to multicast discovery to find other peers, groups, services and content, peers aware of name servers still need to be able to respond to peers not aware of name servers).

19. With respect to claim 2, Pabla teaches all the limitation of claim 1 and further teaches wherein the detecting comprises sending by the discovery client of a discovery query as a multicast operation to find any discovery server in the network environment (Page 4 [0053] and Page 6 [0067]: peers can use multicast to discover name servers).

20. With respect to claim 3, Pabla teaches a method of reliable multicast suppression in service discovery on ad-hoc networks, comprising:

sending a multicast discovery query for discovery servers by a discovery client on a network to find any discovery server present within a scope on the network (Page 4 [0053] and Page 6 [0067]: peers can use multicast to discover name servers);

receiving by the discovery client any response to the multicast discovery query (Page 4 [0053] Page 5 [0057] and page 6 [0067] - peer may receive response from name server);

upon receiving a response of a discovery server to the multicast discovery query, suppressing sending further multicast discovery queries for device services by the discovery client and sending further discovery queries for device services by the

discovery client directly to the discovery server, while the discovery server remains present on the network (Page 4 [0053] and Page 5 [0057]: if name server detected, peer stops using multicast and instead uses the name server for discovery); and

in absence of any response to the multicast discovery query, sending the any further discovery queries for device services by the discovery client as multicast discovery queries on the network (Page 4 [0053] and Page 5 [0057]: if name server not detected, discovery continued through multicast).

21. With respect to claim 4, Pabla teaches all the limitations of claim 3 and further teaches wherein discovery responders continue to respond to multicast discovery queries for device services matching the respective discovery responders from the discovery client irrespective of the discovery server being present on the network (Page 4 [0053] and Page 5 [0057]: as peers default to multicast discovery to find other peers, groups, services and content, peers aware of name servers still need to be able to respond to peers not aware of name servers).

22. With respect to claim 5, Pabla teaches a computing device operating as a discovery client in a network architecture for a discovery protocol capable of ad-hoc and server-based operation, the computing device comprising:

a memory storing software programming for an ad-hoc discovery protocol (Page 7 [0073]); and

a processor operating to execute the software programming in the memory; wherein the software programming comprises:

programming code for switching the discovery client between server-based and ad-hoc discovery modes when a discovery server is determined to be present or absent, respectively, in a network in which the computing device is operating (Page 4 [0053] Page 5 [0057] and page 6 [0067] - peer (client) determines if there are any peer group name servers (discovery server) present);

server-based discovery mode programming code for sending discovery queries of the discovery client directly to the discovery server determined to be present in the network (Page 4 [0053] and Page 5 [0057]: if name server detected, peer stops using multicast and instead uses the name server for discovery); and

ad-hoc discovery mode programming code for sending discovery queries of the discovery client as a multicast transmission to discovery responders in the network (Page 4 [0053] and Page 5 [0057]: if name server not detected, discovery continued through multicast).

23. With respect to claim 6, Pabla teaches all the limitations of claim 5 and further teaches wherein the software programming further comprises programming code for detecting the presence or absence of a discovery server in the network (Page 4 [0053] Page 5 [0057] and page 6 [0067] - peer (client) determines if there are any peer group name servers (discovery server) present).

24. With respect to claim 7, Pabla teaches all the limitations of claim 6 and further teaches wherein the programming code for detecting comprises programming code for sending a multicast discovery query to find discovery servers present in the network (Page 4 [0053] and Page 6 [0067]: peers can use multicast to discover name servers).

25. With respect to claim 8, Pabla teaches a computer-readable media having computer-readable software programming thereon for executing on a discovery client in a network architecture of a discovery protocol capable of server-based and ad-hoc discovery, the software programming comprising:

programming code for switching the discovery client between server-based and ad-hoc discovery modes when a discovery server is determined to be present or absent, respectively, in a network in which the computing device is operating (Page 4 [0053] and Page 5 [0057]: if name server detected, peer stops using multicast and instead uses the name server for discovery, else the peer defaults to using multicast);

server-based discovery mode programming code for sending discovery queries of the discovery client directly to the discovery server determined to be present in the network (Page 4 [0053] and Page 5 [0057]: if name server detected, peer stops using multicast and instead uses the name server for discovery); and

ad-hoc discovery mode programming code for sending discovery queries of the discovery client as a multicast transmission to discovery responders in the network (Page 4 [0053] and Page 5 [0057]: if name server not detected, discovery continued through multicast).

26. With respect to claim 9, Pabla teaches all the limitations of claim 8 and further teaches wherein the software programming further comprises programming code for detecting the presence or absence of a discovery server in the network (Page 4 [0053] Page 5 [0057] and page 6 [0067] - peer (client) determines if there are any peer group name servers (discovery server) present).

27. With respect to claim 10, Pabla teaches all the limitations of claim 9 and further teaches wherein the programming code for detecting comprises programming code for sending a multicast discovery query to find discovery servers present in the network (Page 4 [0053] and Page 6 [0067]: peers can use multicast to discover name servers).

28. With respect to claim 11, Pabla teaches a distributed system of networked computing devices compliant with an ad-hoc service discovery protocol, the distributed system comprising:

at least one networked computing device operating as a discovery client according to a network architecture of the ad-hoc service discovery protocol, the discovery client having a server-based discovery mode and an ad-hoc discovery mode, the discovery client operating to determine whether any discovery server is present or absent in a network and switch to the server-based discovery mode or ad-hoc discovery mode, respectively, according to the determination , the discovery client operating in ad-hoc discovery mode to send discovery queries as multicast transmissions and operating in server-based discovery mode to suppress multicast transmission of discovery requests by the discovery client (Page 4 [0053] and Page 5 [0057]: if name server detected, peer stops using multicast and instead uses the name server for discovery, else the peer defaults to using multicast); and

at least one networked computing device operating as a discovery responder according to the network architecture of the ad-hoc service discovery protocol, the discovery responder operating regardless of presence or absence of a discovery server in the network to respond to multicast transmissions of discovery queries matching the

discovery responder (Page 4 [0053] and Page 5 [0057]: as peers default to multicast discovery to find other peers, groups, services and content, peers aware of name servers still need to be able to respond to peers not aware of name servers).

29. With respect to claim 12, Pabla teaches all the limitations of claim 11 and further teaches wherein the discovery client has a configured mode, the discovery client operating in the configured mode to suppress multicast transmission of discovery requests by the discovery client and send such discovery requests directly to a specified discovery server specified in its configuration (Page 4 [0053] and Page 5 [0057]: if name server detected, peer stops using multicast and instead uses the name server for discovery).

30. With respect to claim 13, Pabla teaches all the limitations of claim 11 and further teaches wherein the discovery responder has a configured mode, the discovery responder operating in the configured mode to suppress response to multicast transmission of discovery requests (Page 4 [0053] and Page 5 [0057]: if name server detected, peer stops using multicast and instead uses the name server for discovery).

31. With respect to claim 14, Pabla teaches a method of discovering device services in ad-hoc and server- managed networks of computing devices, the method comprising:

when connected in an ad-hoc network, sending discovery queries as a multicast transmission from a discovery client computing device (Page 4 [0053] and Page 5 [0057]: if name server not detected, discovery continued through multicast); and

when connected in a server-managed network having a discovery server, sending discovery queries from the discovery client computing device as a directed

transmission to the discovery server (Page 4 [0053] and Page 5 [0057]: if name server detected, peer stops using multicast and instead uses the name server for discovery) using a networking protocol that guarantees message delivery (Page 8 [0083] and [0091] - peer to peer platform may use TCP) .

32. With respect to claim 15, Pabla teaches all the limitations of claim 14 and further teaches responding to discovery queries received as multicast transmissions by a computing device that match device services of the computing device regardless of whether connected in the ad-hoc or server-managed network (Page 4 [0053] and Page 5 [0057]: as peers default to multicast discovery to find other peers, groups, services and content, peers aware of name servers still need to be able to respond to peers not aware of name servers).

33. With respect to claim 16, Pabla teaches all the limitations of claim 14 and further teaches wherein the networking protocol is the transmission control protocol (TCP) (Page 8 [0083] and [0091] - peer to peer platform may use TCP).

34. With respect to claim 17, Pabla teaches a computer-readable media having a software program thereon executable on a computing device to perform a method of discovering device services in ad-hoc and server-managed networks of computing devices, the method comprising:

when the computing device is connected in an ad-hoc network, sending discovery queries as a multicast transmission from the computing device (Page 4 [0053] and Page 5 [0057]: if name server not detected, discovery continued through multicast); and

when the computing device is connected in a server-managed network having a discovery server, sending discovery queries from the computing device directly to the discovery server (Page 4 [0053] and Page 5 [0057]: if name server detected, peer stops using multicast and instead uses the name server for discovery) using a networking protocol that guarantees message delivery (Page 8 [0083] and [0091] - peer to peer platform may use TCP).

35. With respect to claim 18, Pabla teaches all the limitations of claim 17 and further teaches wherein the networking protocol is the transmission control protocol (TCP) (Page 8 [0083] and [0091] - peer to peer platform may use TCP).

36. With respect to claim 19, Pabla teaches a computing device for discovering device services in ad-hoc and server-managed networks of computing devices, the method comprising:

means for, when connected in an ad-hoc network, sending discovery queries as a multicast transmission from a discovery client computing device (Page 4 [0053] and Page 5 [0057]: if name server not detected, discovery continued through multicast); and

means for, when connected in a server-managed network having a discovery server, sending discovery queries from the discovery client computing device as a directed transmission to the discovery server (Page 4 [0053] and Page 5 [0057]: if name server detected, peer stops using multicast and instead uses the name server for discovery) using a networking protocol that guarantees message delivery (Page 8 [0083] and [0091] - peer to peer platform may use TCP).

37. With respect to claim 20, Pabla teaches all the limitations of claim 19 and further teaches wherein the networking protocol is the transmission control protocol (TCP) (Page 8 [0083] and [0091] - peer to peer platform may use TCP).

Conclusion

38. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

39. U.S. Patent 7,272,636 by Pabla. Issued Patent of 2002/0156875.

40. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lazaro whose telephone number is 571-272-3986. The examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



David Lazaro
December 20, 2007